

Notice of Allowability

Application No.

10/037,041

Examiner

Sheng-Jen Tsai

Applicant(s)

RAJWAR ET AL.

Art Unit

2186

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 5/8/2006.
2. ☒ The allowed claim(s) is/are 2-21, 23-42 and 48-50.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

1. This Office Action is taken in response to Applicants' Request for Continued Examination (RCE) filed on May 8, 2006 regarding application 10/037,041 filed on October 19, 2001.

2. Claims 1, 22 and 43-47 have been cancelled.

Claims 48-50 have been added.

Claims 4, 7, 9 and 21 have been amended.

Claims 2-21, 23-42 and 48-50 are pending for consideration.

3. ***Response to Amendments and Remarks***

Applicants' amendments and remarks have been fully and carefully considered with examiner's responses detailed below.

The Office Action mailed on 11/08/2005 indicates that claims 9-10, 21, 31-32 and 42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant has amended claim 9 to include all of the limitations of the base claim and any intervening claims, as well as the limitation of **"wherein the speculative execution is committed upon the occurrence of a non cacheable operation limiting further speculation."**

Applicant has also amended claim 21 to include all of the limitations of the base claim and any intervening claims, as well as the limitation of **"wherein the speculation**

executes the critical section eliding write instructions that do not change a value of memory location being written to.”

These limitations were previously recited in their respective dependent claims and were indicated to be allowable if rewritten into an independent form including all the limitations.

Therefore, independent claims 9 and 21, and all those claims dependent from them, now become allowable.

Allowable Subject Matter

4. Claims 2-21, 23-42 and 48-50 are allowed.

Reasons for Allowable

5. The following is an Examiner's statement of reasons for allowance:

Claims 9 now recites the limitation of **“wherein the speculative execution is committed upon the occurrence of a non cacheable operation limiting further speculation,”** as well as all of the limitations of the base claim and any intervening claims.

Claims 21 now recites the limitation of **“wherein the speculation executes the critical section eliding write instructions that do not change a value of memory location being written to,”** as well as all of the limitations of the base claim and any intervening claims.

These unique limitations, combined with other limitations recited in the claims, distinguish these claims from all pertinent prior art based on which claim analysis is performed.

6. The patentability of Applicants' invention was examined and evaluated against the prior art listed below. However, none of them, either alone or in combination with others, teaches all the limitations recited in the claims presented by Applicants.

- McKeen et al. (U.S. 5,421,022), "Apparatus and Method for Speculatively Executing Instructions in a Computer System."
- Chaudhry et al. (U.S. 6,684,398), "Monitor Entry and Exit for a Speculative Thread during Space and Time Dimensional Execution."
- Shibayama et al., (US patent Application Publication 2003/0014602), "Cache Memory Control Method and Multi-Processor System."
- Ohsawa et al., (US Patent Application Publication 2003/0014473), "Multi-Thread Executing Method and Parallel Processing System."

However, none of the prior art of the record teaches or suggests, independently or in combination, the specific feature recited by independent claims 1, 23 and 31 as indicated above.

Conclusion

7. Claims 2-21, 23-42 and 48-50 are allowed.


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sheng-Jen Tsai whose telephone number is 571-272-4244. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim can be reached on 571-272-4182. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sheng-Jen Tsai
Examiner
Art Unit 2186

May 18, 2006


PIERRE BATAILLE
PRIMARY EXAMINER
5/31/06